Monday, 9/10/2007 1:31:37 PM
Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: BRACKET ASSEMBLY
Job Number	: 34514		
Estimate Number	: 10291		
P.O. Number	: NIA	Part Number	: D3183044
This Issue	: 9/10/2007 S.O. No. : NA	Drawing Number	: D3183 REV C1
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: NA Type : MACHINED PARTS	Drawing Revision	: C1
Previous Run	: 31732	Material	: NIA
Written By	:	Due Date	: 9/30/2007 Qty: 8 Um: Each
Checked & Approved By	: 07.09.11		
Comment	: Est Rev:Pick:A 04.02.18 New issue KJ/DS		

Additional Product

Job Number:

Seq. #:	Machine Or Operation:	Description :
1.0	M174B2000X01500	17-4 SS Bar

Comment: Qty.: 0.4812 f(s)/Unit Total : 3.8497 f(s)
Material: 17-4 SS Bar per AMS 5604/5643
(M17-4-B1.500x02.000)
Identify for D3183-4
Batch: M103089 #M14773 → 2 blanks

GA 07/11/12

2.0	BAND SAW	BAND SAW

GA 07/11/12

Comment: BAND SAW
Cut blanks: (1.500" x 2.000") 5.500" long

3.0	HAAS1	HAAS CNC VERTICAL MACHINING #1

Comment: HAAS CNC VERTICAL MACHINING #1

1-Machine D3183-4 as per Folio FA322 and Dwg D3183
Identify as D3183-4

2-Deburr

3-Scribe batch number

SA/GA 07/11/12 8

4.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE

Comment: INSPECT PARTS AS THEY COME OFF MACHINE

SA/GA/EG 07/11/12 8

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes (No) **DQA:** R **Date:** 07/12/20

QA: N/C Closed: _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B **Initial** Chief Eng	**Action Description** Chief Eng	**Sign & Date**	**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
01.11.13	3.0	-1 part. 'Y' origin not taken properly. (New machinist)	QS1012	Scrap & replace	SL 01.11.13	07.11.14	QS1012	07.11.14
07/11/15	3.0	1 part scrap drill bit broke inside ~~the~~ of the part	QS1012	Scrap → destroy & replace	JA 07/11/16	07/11/16	QS1012	07.11.16

NOTE: Date & initial all entries

Date: Monday, 9/10/2007 1:31:37 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** BRACKET ASSEMBLY

Job Number: 34514 **Part Number:** D3183044

Job Number:

Seq. #:	Machine Or Operation:	Description :
5.0	QC8	SECOND CHECK

Comment: SECOND CHECK mk 07/11/16 (8)

6.0	D312121	Bolt

Comment: Qty.: 2.0000 Each(s)/Unit Total : 16.0000 Each(s)
Pick:
Qty Part Number Description Batch
2 D3121-21 Bolt B33503 x 12mm
B 34582 x 74mx 8+8 07/11/20

7.0	D3183045	Bearing Assembly

Comment: Qty.: 2.0000 Each(s)/Unit Total : 16.0000 Each(s)
Pick:
Qty Part Number Description Batch
2 D3183-045 Bearing Ass B36369 mf 07-12-20

8.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1

Comment: SMALL & MEDIUM FAB RESOURCE 1
Assemble D3183-043 as per Dwg D3183. mf 07-12-20 8

9.0	QC5	INSPECT WORK TO CURRENT STEP

Comment: INSPECT WORK TO CURRENT STEP SB 07/12/20 (8)

10.0	PACKAGING 1	PACKAGING RESOURCE #1

Comment: PACKAGING RESOURCE #1
Identify and Stock
Location:_____ 7/12/20 SB (8X)

11.0	QC21	FINAL INSPECTION/W/O RELEASE

Comment: FINAL INSPECTION/W/O RELEASE 8 07/12/20

Job Completion

U 07/12/20

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

QA: N/C Closed: _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	34514
Description: Bracket	Part Number:	D3183-4
Inspection Dwg: D3183 Rev: C1		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

[X] First Article [ ] Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
R0.190	+/-0.030	R.190	✓			
R0.063	+/-0.010	R.063	✓			
0.182	+/-0.010	.187	✓			
0.070	+/-0.010	.073	✓			
0.100	+/-0.010	.100	✓			
Ø0.201 x 0.100	+/-0.010	.197x.102	✓			
0.182	+/-0.010	.184	✓			
5.32	+/-0.030	5.323	✓			
5.036	+/-0.010	5.036	✓			
2.120	+/-0.010	2.120	✓			
1.290	+/-0.010	1.250	✓			
0.365	+/-0.010	.365	✓			
0.218	+/-0.010	.216	✓			
1.030	+/-0.010	1.030	✓			
1.90	+/-0.030	1.890	✓			
1.012	+/-0.010	1.012	✓			
Ø0.201 x 0.100	+/-0.010	Ø.197x.100	✓			
~~0.182~~	~~+/-0.010~~					Not on drawing
0.786	+/-0.010	.785	✓			
Ø0.392	+0.002/-0.000	Ø.392	✓			
R0.19	+/-0.030	R.190	✓			
3.954	+/-0.010	3.954	✓			
0.162	+/-0.010	.162	✓			
R0.19	+/-0.030	R.150	✓			
R0.25	+/-0.030	R.250	✓			
4.26	+/-0.030	4.263	✓			
2.800 Calculated dimension	+/-0.030	2.800	✓			
0.162	+/-0.010	.159	✓			
0.615	+/-0.010	.615	✓			
0.435	+/-0.010	.432	✓			
0.200	+/-0.010	.201	✓			
0.381	+/-0.010	.380	✓			
0.032	+/-0.010	.032	✓			

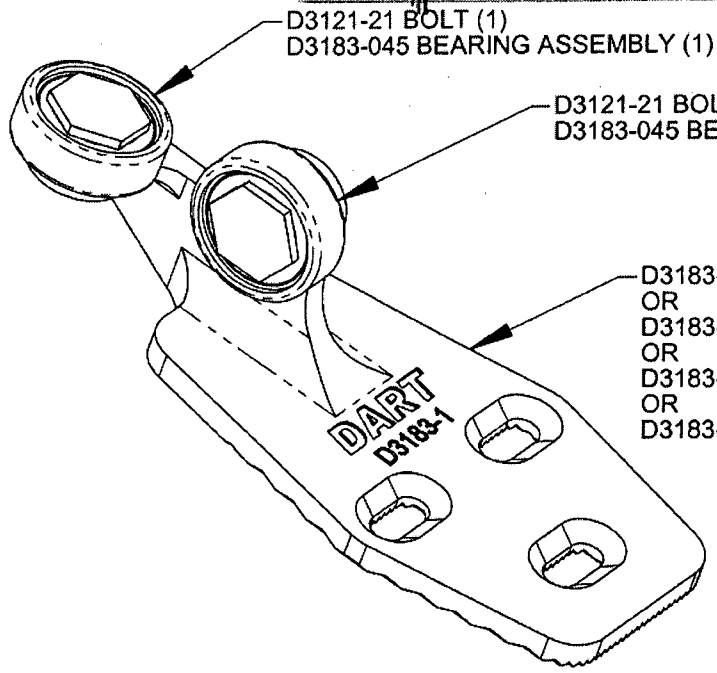
Measured by:		Audited by:	J.L	Prototype Approval:	N/A
Date:	04.11.13	Date:	04/11/14	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	03.11.12	New Issue P/O D3183-044	KJ/RF	
B	04.03.15	Changes as per revision C	KJ/JLM/RF	
C	04.06.15	Dimension 2.800 was 2.080; removed 1.155, 0.36 dimensions	KJ/JLM	
D	06.03.09	Dwg Rev update	KJ/JLM	

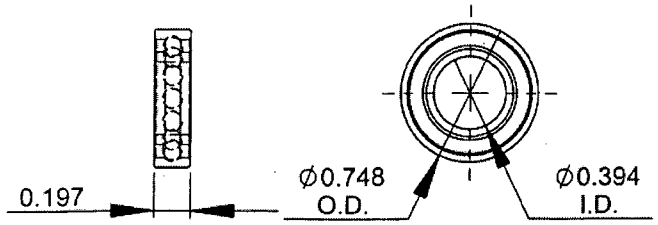
DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3183	REV. C SHEET 1 OF 4
DATE 04.02.17		TITLE BRACKET ASSEMBLY	SCALE 1:1

A	03.01.24	NEW ISSUE
B	03.06.17	REMOVE BEARING; 1.012 WS 0.882
C	04.02.17	ADD -045/-9; 0.182 WAS 0.431
C1	04.11.09	0.830 WAS 0.850

RELEASED
04.03.01

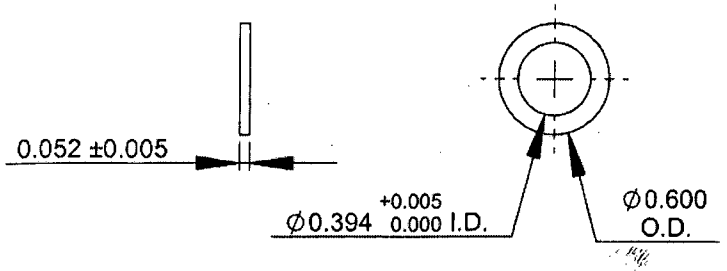


D3183-041 BRACKET ASSEMBLY (SHOWN)
D3183-042 BRACKET ASSEMBLY (OPPOSITE)
D3183-043 BRACKET ASSEMBLY (SIMILAR)
D3183-044 BRACKET ASSEMBLY (SIMILAR)



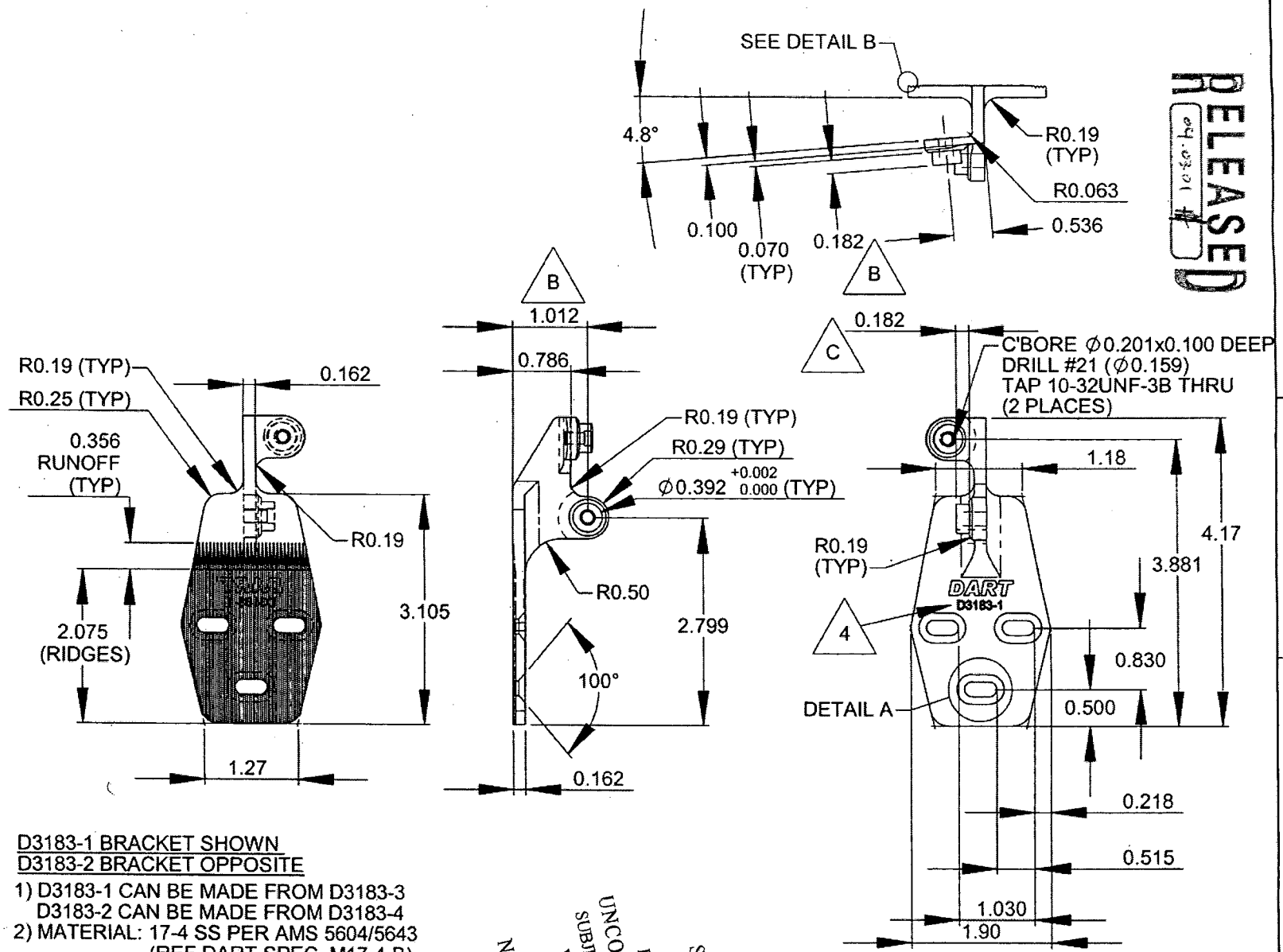
D3183-5 BEARING: SPECIFICATION CONTROL DRAWING

1) SINGLE ROW, DEEP GROOVE, CONRAD TYPE, SHIELDED
2) POSSIBLE SUPPLIER: NSK P/N 6800ZZ
3) ALL DIMENSIONS ARE IN INCHES



D3183-7 WASHER

1) MATERIAL: AISI 303 ROUND BAR (M303R) ANNEALED
2) BREAK ALL SHARP EDGES 0.005 TO 0.010
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
4) ALL DIMENSIONS ARE IN INCHES



RELEASED 04.02.17

D3183-1 BRACKET SHOWN
D3183-2 BRACKET OPPOSITE

1) D3183-1 CAN BE MADE FROM D3183-3
   D3183-2 CAN BE MADE FROM D3183-4
2) MATERIAL: 17-4 SS PER AMS 5604/5643
   (REF DART SPEC. M17-4-B)
   MIN ULTIMATE STRENGTH = 150 ksi
   MIN YIELD STRENGTH = 100 ksi
3) BREAK ALL SHARP EDGES 0.005 TO 0.015
4) ENGRAVE DART P/N & LOGO AS SHOWN
5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
6) ALL DIMENSIONS ARE IN INCHES

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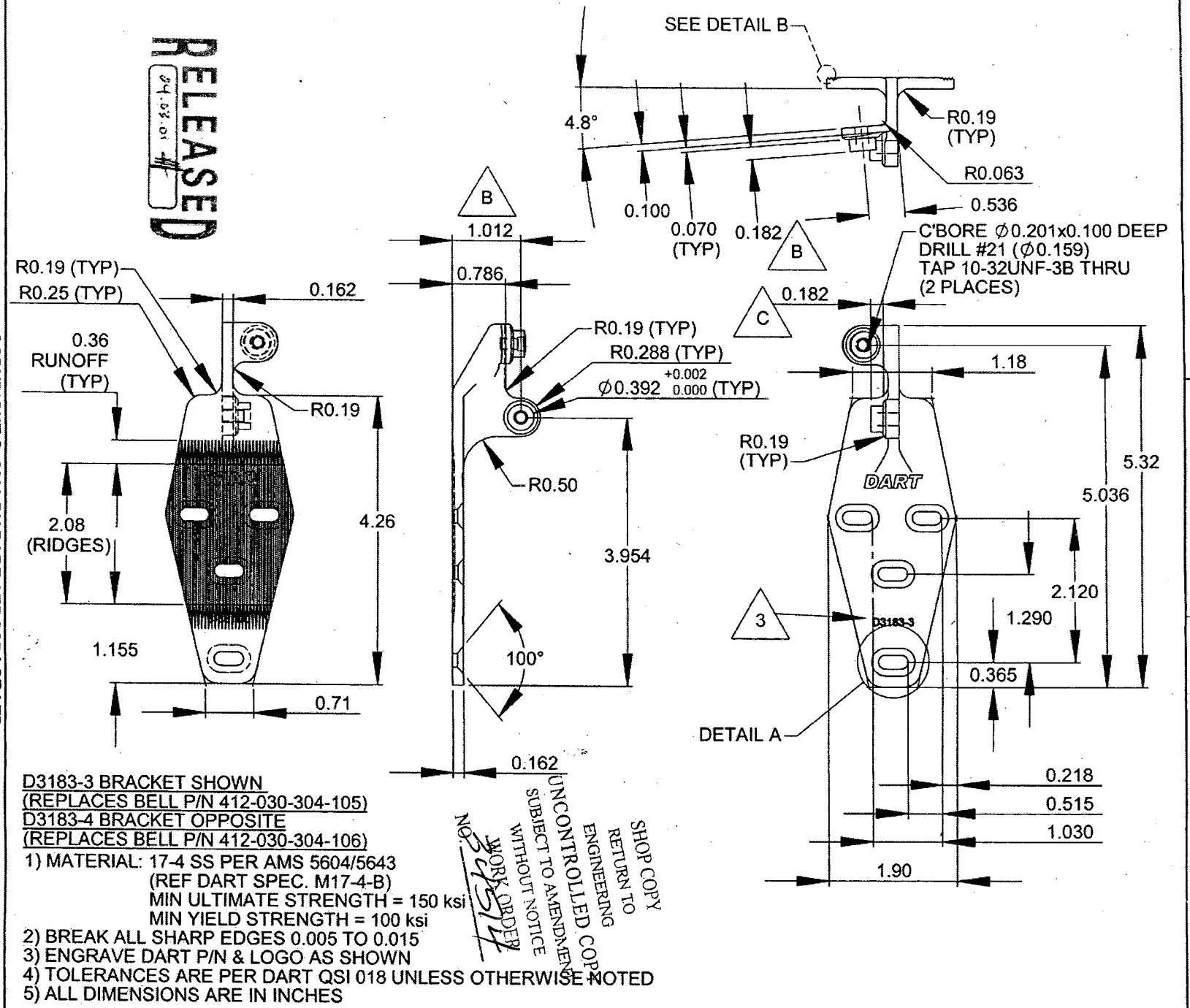
DATE 04.02.17	DRAWING NO. D3183	REV. C
	TITLE BRACKET ASSEMBLY	SHEET 2 OF 4
		SCALE 1:2



D3183-3 BRACKET SHOWN
(REPLACES BELL P/N 412-030-304-105)
D3183-4 BRACKET OPPOSITE
(REPLACES BELL P/N 412-030-304-106)

1) MATERIAL: 17-4 SS PER AMS 5604/5643
(REF DART SPEC. M17-4-B)
MIN ULTIMATE STRENGTH = 150 ksi
MIN YIELD STRENGTH = 100 ksi
2) BREAK ALL SHARP EDGES 0.005 TO 0.015
3) ENGRAVE DART P/N & LOGO AS SHOWN
4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
5) ALL DIMENSIONS ARE IN INCHES

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DATE 04.02.17	DRAWING NO. D3183		SHEET 3 OF 4
	TITLE BRACKET ASSEMBLY		SCALE 1:2

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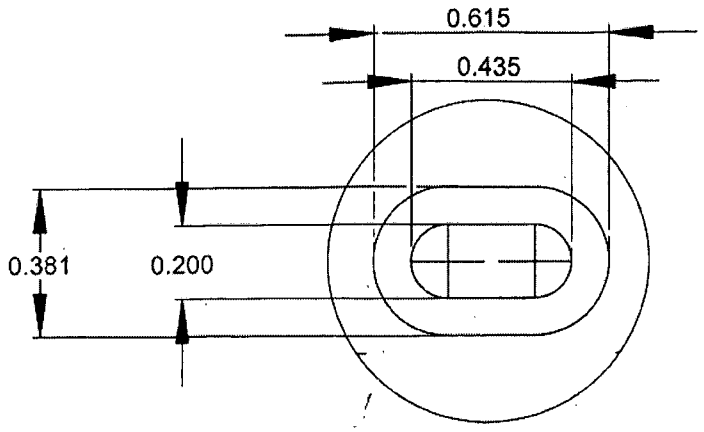
CHECKED	APPROVED	DRAWING NO. D3183	REV. C SHEET 4 OF 4
DATE 04.02.17		TITLE BRACKET ASSEMBLY	SCALE 1:1



DETAIL A (2 : 1)

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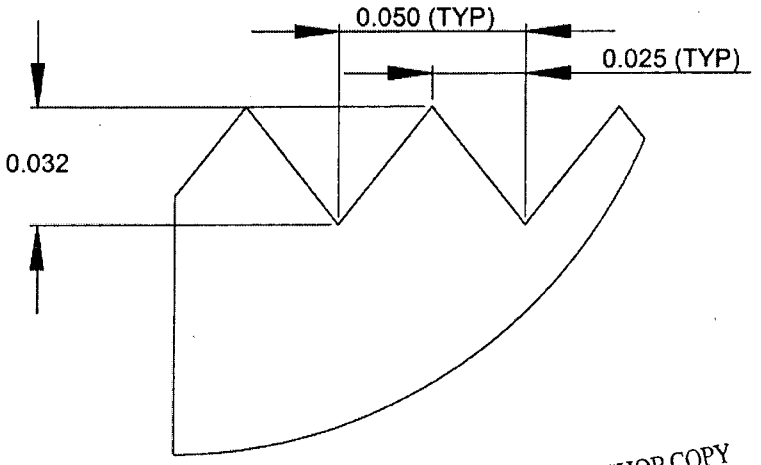
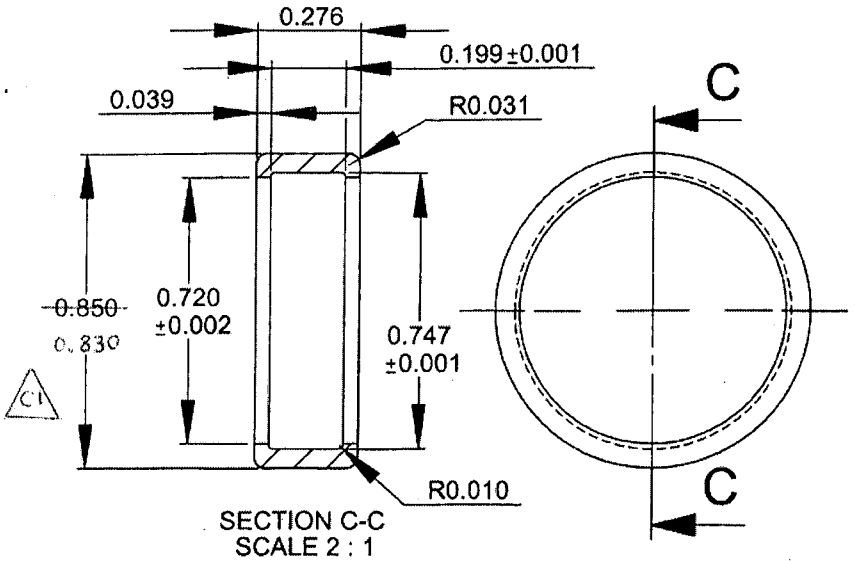
04.03.01



DETAIL B (20 : 1)



SECTION C-C
SCALE 2 : 1

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D3183-9 CAP

1) MATERIAL: DELRIN ROD, Ø1.00
(REF DART SPEC. M-DELRIN-R1.00)
2) TOLERANCES ARE PER DART QSI 018
UNLESS OTHERWISE NOTED
3) ALL DIMENSIONS ARE IN INCHES

D3183-045 BEARING ASSEMBLY

1) ASSEMBLE D3183-5 BEARING AND
D3183-9 CAP